USDA-APHIS-WILDLIFE SERVICES
BISMARCK, NORTH DAKOTA
NORTH DAKOTA AQUATIC RODENT ENVIRONMENTAL ASSESSMENT
MONITORING REPORT and AMENDMENT - FY03

INTRODUCTION

The US Department of Agriculture (USDA)- Animal and Plant Health Inspection Service (APHIS)- Wildlife Services (WS) completed a *North Dakota Aquatic Rodent Damage Management* Environmental Assessment (EA) in 1998 which addressed the need to conduct aquatic rodent damage management and analyzed potential impacts of various alternatives for responding to aquatic rodent damage problems in North Dakota. The EA analyzed beaver and muskrat damage reduction for the protection of agricultural and natural resources, property, and to reduce threats to public health and safety.

A Decision and Finding of No Significant Impact (FONSI) was signed June 16, 1998 for the *North Dakota Aquatic Rodent Damage Management* EA. The Decision selected the Fully Integrated Wildlife Damage Management for all Land Classes Alternative (Proposed Action). Monitoring reports were completed annually since the original Finding of No significant Impact (FONSI) was signed. Copies of the EA, Decision, FONSI, and monitoring reports are available from the North Dakota WS State Office, USDA, APHIS, WS, 2110 Miriam Circle, Suite A, Bismarck, North Dakota, 58501-2502.

The purpose of this report is to document the review of information compiled from program activities since the *North Dakota Aquatic Rodent Damage Management* EA and prior monitoring reports were completed. WS is reporting the results from implementing the proposed action alternative from the EA during Fiscal Year 2003 (FY03) and to provide an aquatic rodent damage management program activities analysis. This analysis will help determine if the Decision made in conjunction with the EA is still appropriate and actions to take if the affected environment or impacts have significantly changed from the analyses in the 1998 EA. This review uses the most currently available information.

PROGRAM RESULTS ANALYSIS of MAJOR ISSUES ANALYZED in the EA

MONITORING INFORMATION

Primary issues addressed in the 1998 EA included the impact of WS' aquatic rodent damage management on the viability of target and non-target species populations, and the risks posed by aquatic damage management methods to the public and domestic pets. Data and discussion on these issues are presented below.

Concerns for the North Dakota WS Kill of Beaver and Muskrat to Cause Population Declines, When Added to Other Mortality, and the Take of Non-target Animals

A primary issue addressed in the EA was the affect of WS' beaver and muskrat removal on the viability of target and non-target wildlife populations. Beaver damage continues to be the most important aquatic rodent problem in North Dakota, and more beaver were removed than any other aquatic rodent (Table 1). However, the total annual take of beaver is only 8.5% (with 5.2% taken by WS) of the estimated statewide population (Table 1). Various studies have concluded that beaver populations can sustain annual harvests of 20-33% (Henry and Bookhout, 1969; Payne, 1984; Novak 1987). Therefore, it is determined that WS activities, even with possible "*Other Harvest*" under reporting, are not adversely affecting the beaver population in North

Dakota.

Smith et al. (1981) estimated that muskrats could sustain an annual harvest of 74% of the fall population. Clark (1987) estimated a 64% maximum sustainable harvest rate for muskrat populations on the upper Mississippi River. Based on this information, WS' muskrat damage management actions, even with possible "*Other Harvest*" under reporting, is not adversely affecting the muskrat population in North Dakota (Table 1).

Table 1. North Dakota WS lethal take of target species in FY03.

Species	NDGF Est. Pop.[1]	WS Take	Other Take [1,2]	WS Take (% of Pop.)	Total Take (% of Pop.)
Beaver	27,224	1,427	889	5.2	8.5
Muskrat	920,759	51	30,776	0.01	3.3

[1] Most currently available information.
[1, 2] Based on pelts sold to North Dakota fur buyers.

The lethal take of non-target animals totaled nine (Table 2). No threatened or endangered (T/E) species were killed or effected by WS aquatic rodent damage management in North Dakota in FY03. The low level of take of non-target species is not adversely affecting any species populations in North Dakota.

Table 2. WS lethal take of non-target species, FY03.

Species	# Taken
Mink	1
Muskrat	1
Raccoon	6
River Otter	1
Total	9

Concerns about the Selectivity, Relative Cost, and Effectiveness of Beaver and Muskrat Damage Management Methods

Under the current program, all methods are used as selectively and effectively as possible, in conformance with the WS Decision Model[1] (Slate et al. 1992) and WS Program Directives. Several methods are typically 100% selective for target species such as foot-hold traps, shooting, and neck snares (Table 3). In addition, binary explosives are used to breach beaver dams to alleviate flooding that may cause damage or pose a damage threat. During FY03, WS used 403 pounds of binary explosive to remove 55 beaver dams.

Beaver and muskrats cause damage to various resources in North Dakota. During FY03, monetary losses totaled $557,100 (Table 4). In contrast, a total of $306,000 in federal and cooperative funding was used to mitigate the losses.

In FY03, WS responded to 522 occurrences of beaver damage and 4 occurrences of muskrat damage. To mitigate the damage WS provided technical assistance (Table 5) or conducted operational damage management to reduce or prevent additional damage.

[1] The Decision Model is a cognitive thought process used by WS to determine the best methods to address a given wildlife damage management problem (Figure 3-1 in the EA).

Concerns about the Effects of North Dakota WS Beaver and Muskrat Damage Management on Public Health and Safety.

Effects on public health and safety include potential benefits caused by North Dakota WS fostering a safer environment and the potential negative effects that might result from the exposure of the public to wildlife damage management methods. The potential benefits from the North Dakota WS Program include increased public health and safety on roadways, railroad beds, reduced disease threats to humans and domestic pets (e.g., giardia, tularemia), and protection of agricultural and natural resources.

Table 3. Selectivity[1] of damage management methods used by the North Dakota WS program during FY03.

Take	Foot-hold trap	Cage trap	Body-gripping trap	Shooting	Neck Snare
Target					
Beaver	85	33	1,097	203	9
Muskrat	17	0	14	20	0
Total	102	33	1,111	223	9
Non-target					
Mink	0	1	0	0	0
Muskrat	0	0	1	0	0
Raccoon	0	1	5	0	0
River Otter	0	0	1	0	0
Total	0	2	7	0	0
Total Take	102	35	1,118	223	9
Selectivity	100%	94.3%	99.4%	100%	100%

[1] Selectivity (%) is the sum of the target animals taken by a specific control method divided by the total of target and non-target animals taken by those methods.

Table 4. Beaver and Muskrat Damage; FY03.

Resource	Beaver	Muskrat
Timber	$434,000	----
Field Crops	$13,400	----
General Property	$51,800	----
Range/Pasture	$10,000	----
Roads/Bridges	$57,800	$100
Total	$557,000	$100

Explosive handling and use procedures employed by WS followed the rules and guidelines set forth by the Institute of Makers of Explosives, the safety arm of the commercial explosive industry in the United States and Canada. All WS explosive specialists are required to attend 30 hours of extensive explosive safety training and demonstrate explosive safety skills to a certified explosive specialist in the field before obtaining certification. WS also followed all transportation and storage regulations from State and Federal agencies such as the Occupational Safety and Health Association, Bureau of Alcohol-Tobacco-Firearms, and Department of Transportation.

Table 5. Technical assistance projects conducted for beaver and muskrat, FY03.

Species	# of Projects	# of Participants
Beaver	198	314
Muskrat	2	3
Total	200	317

No conflicts with the public or domestic pets were reported to North Dakota WS as a result of any beaver or muskrat damage management activities during FY03.

Compliance and Monitoring

Aquatic rodent damage management has been conducted in a

manner consistent with applicable environmental laws and regulations, including the Endangered Species Act, the Federal Insecticide, Fungicide and Rodenticide Act, and the National Environmental Policy Act. WS also complied with all transportation and storage regulations from State and Federal agencies such as the Occupational Safety and Health Association, Bureau of Alcohol-Tobacco-Firearms, and Department of Transportation. WS personnel will continue to coordinate with local officials regarding wildlife population viability, protection of resources, and public and pet health safety concerns. Substantial changes in the scope of work or changes in relevant guidance documents or environmental regulations may trigger the need for further analysis.

Finding of No Significant Impact

Based on a review of information available since the completion of the EA, FONSI and Decision, there continues to be no indication that WS management of aquatic rodents is having an adverse impact on the quality of the human environment. The Decision made in conjunction with the EA has also been reviewed, and a new ~~Decision~~ is not deemed necessary. This determination is based on consideration of the following factors, which were previously addressed.

1. Management of aquatic rodents, as conducted by WS in North Dakota is not regional or national in scope.

2. WS damage management poses minimal risks to public health and safety. No injuries to any member of the public are known to have resulted from these activities in the State.

3. There are no unique characteristics such as park lands, prime farm lands, wetlands, wild and scenic areas, or ecologically critical areas that would be significantly affected.

4. The efforts on the quality of the human environment are not highly controversial. Although there is some opposition to wildlife damage management, the program is not highly controversial in terms of size, nature, or effect in the State.

5. Based on the analysis documented in the EA, monitoring reports and the accompanying administrative file, the effects of aquatic rodent damage management on the human environment would not be significant. The effects of these activities are not highly uncertain and do not involve unique or unknown risks.

6. These activities do not establish a precedent for any future action with significant effects.

7. No significant cumulative effects were identified through the previous EA or through this review. The number of animals removed by WS, when added to the total of animals taken by private fur trappers, etc., falls well within allowable harvest levels for those animals. In addition, WS coordinated and consults with the North Dakota Department of Game and Fish concerning aquatic rodent damage management to insure no adverse affects to the human environment.

8. None of the activities in the State would affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, nor would they likely cause any loss or destruction of significant scientific, cultural, or historical resources.

9. An informal Section 7 consultation with the U.S. Fish and Wildlife Service confirmed that the

activities carried out under WS management of aquatic rodent damage management projects would not likely adversely affect any threatened or endangered species.

10. All activities are carried out in compliance with all Federal, State, and local laws imposed for the protection of the environment.

DECISION AND RATIONALE, AND FINDING OF NO SIGNIFICANT IMPACT

Based on a review of information available since the completion of the 1998 EA there continues to be no indications that North Dakota WS aquatic rodent damage management is having adverse impacts on wildlife populations or the quality of the human environment. The Decision made in conjunction with the 1998 EA has also been reviewed and determined that the current analysis is still appropriate. In addition, analysis conducted for this report validate that no significant impacts to the quality of the human environment have occurred from the proposed action. Therefore, the analyses in the EA and Decision/FONSI remains valid and a new EA is not warranted.

I have carefully reviewed the EA and Monitoring Reports and believe that the issues identified in the EA and results of the Monitoring Reports are best addressed by continuing Alternative 1 (Fully Integrated Wildlife Damage Management for all Land Classes Alternative - Proposed Action). Alternative 1 provided the best effectiveness and selectivity of methods and did not adversely impact the low level of risk to the public, pets, and T/E species. WS will continue to use the currently authorized aquatic rodent damage management methods in compliance with applicable mitigation measures in North Dakota where WS has been requested to provide assistance since the completion of the *North Dakota Aquatic Rodent Damage Management* EA .

For additional information or questions regarding this FONSI, please contact the North Dakota/South Dakota Wildlife Services State office, 2110 Miriam Circle, Suite A, Bismarck, North Dakota, 58501-2502, telephone (701) 250-4405.

Michael, Worthen, Western Regional Director
APHIS - Wildlife Services, Denver, Colorado

April 26, 2004
Date

LITERATURE CITED

Clark, W. R. 1987. Effects of harvest on annual survival of muskrats. J. Wildl. Manage. 51:265-272.

Henry, D. B., and T. A. Bookhout. 1969. Productivity of beavers in northeastern Ohio. J. Wildl. Manage. 33: 927-932.

Novak, M. 1987. *Beaver* in Wild Furbearer Management and Conservation in North America. M. Novak, J.A. Baker, M.E Obbard, B. Malloch, eds. Ontario Ministry of Natural Resources; pg 301.

Payne, N. F. 1984. Mortality rates of beaver in Newfoundland. J. Wildl. Manage. 48:117-126.

Slate, D. A., R. Owens, G. Connolly, and G. Simmons. 1992. Decision making for wildlife damage management. Trans. North Am. Wildl. Nat. Res. Conf. 57:51-62.

Smith, H. R., R. J. Sloan, and G. S. Walton. 1981. Some management implications between harvest and population resiliency of the muskrat (*Ondatra zibethicus*). pp. 425-442 *in* J. A. Chapman and D. Pursley, eds. Proc. Worldwide Furbearer Conf. Frostburg, MD.